APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/490,836	01/25/2000	John O. Ryan	M.8284-US	7711

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EXAMINER
SANTOS, PATRICK J D

ART UNIT	PAPER NUMBER
2171	

DATE MAILED: 08/19/2003　　*10*

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/490,836	RYAN ET AL.
	Examiner	Art Unit
	Patrick J Santos	2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _25 January 2000_ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-10_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-10_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _25 January 2000_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)		4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_ .		6) ☐ Other: .

DETAILED ACTION

Drawings

1.   The drawings are objected to because Figures 1A, 1B, and 1C do not implement

MPEP § 608.02(g) guidelines for drawings of prior art.

2.   Per MPEP § 608.02(g), Figures 1A, 1B, and 1C should be designated by a

legend such as --Prior Art-- because only that which is old is illustrated.

3.   A proposed drawing correction or corrected drawings are required in reply to the

Office action to avoid abandonment of the application. The objection to the drawings

will not be held in abeyance.

Specification

4.   The abstract of the disclosure is objected to because it does not implement

MPEP § 608.01(b) guidelines for abstracts. Specifically, there is language in the

abstract that does not provide sufficient information as to what is new in the art.

5.   The abstract relies on the phrase "suitably compliant receiver" without sufficient

supporting text to distinguish it from other patent applications that also describe audio

and video anti-piracy methods and apparatuses. Furthermore, the abstract relies on the

phrase "carry a descrambling key" without sufficient supporting text to distinguish it from

other patent applications that also describe encryption/decryption methods in which a

key is transferred. Correction is required.

Claim Objections

6.   Claims 6-9 are objected to because of the following informality: the word

"summer" is used in the phrase "a summer is coupled to the encoding circuitry". The

word "summer" appears to be a typographic error. Claim 6 contains the actual

typographic error. Claims 7-9 depend on Claim 6 and so contain the same informality

as well. Appropriate correction is required.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8.   Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated under U.S.

Patent No. 3,963,865 issued to Songer (Songer '865).

9.   Regarding Claim 1, Songer '865 teaches corresponding limitations, specifically a

method of transmitting data in a video signal whereby the data is not recorded by

particular video recorders, comprising the acts of:

- providing the data (column 12, lines 33-35);

- encoding the data (column 12, lines 40-44);

- modifying a predetermined part of the video signal by inserting therein the

    encoded data (column 12, lines 36-39);

wherein the predetermined part of the video signal is not recorded by the particular

video recorders (column 12, lines 44-53).

10.   In other words, Songer '865 teaches a way to hide synchronization information in

such a way that the information is received properly by a receiving device (e.g. a

television set), but such that recording by video recorders of this synchronization

information is hampered, and thus prevents a video signal from being accurately

reproduced. Thus all the limitations of Claim 1 are taught by Songer '865.

11.   Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated under

U.S. Patent No. 4,100,575 issued to Morio (Morio '575).

12.   Regarding Claim 1, Morio '575 teaches corresponding limitations, specifically a

method of transmitting data in a video signal whereby the data is not recorded by

particular video recorders (column 13, lines 29-35), comprising the acts of:

-    providing the data (column 13, lines 35-40);

-    encoding the data (column 13, lines 40-45);

-    modifying a predetermined part of the video signal by inserting therein the

     encoded data (column 13, lines 45-57);

wherein the predetermined part of the video signal is not recorded by the particular

video recorders (column 13, lines 29-35).

13.   Morio '575 relies on synchronization data not being recorded by standard video

recorders. Morio '575 teaches a way to encode a video signal, such that the

synchronization information cannot be recorded. Morio '575 also explicitly teaches

transmission of this encoded signal (Abstract lines 18-19), thus Morio '575 teaches all the limitations of Claim 1.

11.   Regarding Claim 2, Morio '575 teaches corresponding limitations, specifically all the limitations of Claim 1 as described above, plus specifying that the "predetermined part" is in a blanking interval (VBI or HBI) of the video signal (column 13, lines 57-64). Thus Morio '575 teaches all the limitations of Claim 2.

Claim Rejections - 35 USC § 103

12.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13.   Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morio '575 as applied to Claims 1 and 2 above, and in further view of U.S. Patent No. 3,852,519 issued to Court (Court '519).

14.   Claim 3 provides the additional limitation to Claim 2 that the "predetermined part" is also below a selected voltage level. Morio '575 does not explicitly teach reducing the signal below a selected voltage level.

15.   However, Court '519 teaches a television communication secrecy technique in which the video carrier is suppressed for a "predetermined part" of the video in which data is to be hidden (column 26, lines 40-61). This implies modifying and specifically reducing the voltage level of the video signal.

16.   In order to implement the method of hiding data such as synchronization

information in a video signal taught by Morio '575 and to provide additional security by

selectively suppressing the video carrier as taught by Court '519, it would have been

obvious to a person having ordinary skill in the art to lower the voltage level of the signal

in Morio '575 in a "predetermined part of the signal" as taught by Court '519. Thus

Claim 3 is rejected under 35 USC 103(a).

17.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morio

'575 as applied to Claim 1 above and in further view of U.S. Patent No. 5,666,168

issued to Montgomery et al. (Montgomery '168).

18.   Claim 4 provides the additional limitation to Claim 1 that the "predetermined part"

is above a "predetermined frequency". Nonetheless, Morio '575 does not explicitly

teach modifying the video signal frequency of the "predetermined part".

19.   However, Montgomery '168 teaches a technique in which data can be injected

into a "modulated signal into the video bandwidth at a frequency greater than the

chrominance subcarrier" (column 16, lines 12-14). While, the specific application taught

by Montgomery '168 is to transmit facsimile information in vestigial sidebands of a video

signal, this technique applies for the transmission of any type of data, including

synchronization information. Montgomery '168 goes on to teach, "Therefore, a wide

variety of data may be transmitted and is particularly useful in systems where one way

communications is preferred." (column 15, line 66 through column 16, line 1). This

teaching implies modifying and specifically increasing the frequency of the

"predetermined part" that carries the injected data.

20.   In order to implement the method of hiding data such as synchronization

information in a video signal taught by Morio '575 and to provide additional security by

modifying the frequency as taught by Montgomery '168, it would have been obvious to a

person having ordinary skill in the art to increase the modified signal in Morio '575

above a "predetermined frequency" in the portion of the signal carrying the injected data

as taught by Montgomery '168. Thus Claim 4 is rejected under 35 USC 103(a).

21.   Claims 5, 6, 7, and 10 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 4,964,162 issued to McAdam et al. (McAdam '162)

in view of Morio '575.

22.   Regarding Claim 5, McAdam '162 teaches a method of scrambled video signal in

which a payload of data – in this case a pseudo-random number specifying a line spin

breakout paired with a transform identifier to unscramble the video signal – is stored in

the blanking interval (column 3, line 61 through column 4, line 39). McAdam '162 goes

on to teach:

-   receiving the modified video signal (see Figure 12 "Television Signal");

-   transmitted the video portion of the modified video signal (see Figure 12, the

    signal feeding out of the A/D Converter, which will be decrypted downstream);

-   extracting the encoded data from the modified video signal (see Figure 12,

    items 242 (decryptor), and 232 (line spin transform decoder) in particular);

- decoding the extracted data (see Figure 12, items 230 (line tilt compensation

circuit), 34' (memory), and 38' (inverter) in particular);

(also see column 4, line 40 through column 5, line 25). Nonetheless, McAdam '162

does not explicitly teach hiding the payload of data such that it cannot be recorded by

particular video recorders.

23.   However, Morio '575 teaches the corresponding limitation, specifically a method

of transmitting data in a video signal whereby the data is not recorded by particular

video recorders (column 13, lines 29-47).

24.   In order to implement the video scrambling/unscrambling system of McAdam

'162 in such a way that the data payload could not be recorded by particular video

recorders, it would have been obvious to a person having ordinary skill in the art to

apply the data hiding techniques of Morio '575 to the data receiver of McAdam '162.

Thus Claim 5 is rejected under 35 USC 103(a).

25.   Regarding Claim 6, McAdam '162 teaches an encoder in which a payload of data

is stored in the blanking interval (column 3, line 61 through column 4, line 39) as part of

a video signal scrambling/unscrambling method. Specifically McAdam '162 teaches

- An input terminal in which to receiving a video signal (see Figure 1,

"Television Signal" in);

- An input data terminal for receiving data (see Figure 1, item 40 (Pseudo-

Random Number Generator) and "Seed" as inputs into item 36 (Line-Spin

Transform Encoder) and item 52 (Encryptor)). Note that the Pseudo-Random

Number and the Transform Identifier is the data payload in the preferred

embodiment of the scrambling/unscrambling method of McAdam '162.;

- Encoding Circuitry (see Figure 1, most notably items 26 (Audio Encoder), 34

(Memory), and 38 (Inverter)).

Nonetheless, McAdam '162 does not explicitly teach hiding the payload of data such

that it cannot be recorded by particular video recorders.

26.   However, Morio '575 teaches the corresponding limitation, specifically a method

of transmitting data in a video signal whereby the data is not recorded by particular

video recorders (column 13, lines 29-47).

27.   In order to implement an encoder for the video scrambling/unscrambling system

of McAdam '162 in such a way that the data payload could not be recorded by particular

video recorders, it would have been obvious to a person having ordinary skill in the art

to apply the data hiding techniques of Morio '575 to the encoder of McAdam '162. Thus

Claim 6 is rejected under 35 USC 103(a).

28.   Regarding Claim 7, it recites the additional limitation to Claim 6 that the

"predetermined part" is in a blanking interval of the video signal. McAdam '162 explicitly

teaches storing a data payload into the horizontal blanking interval (column 4, lines 14-

18). Thus McAdam '162 teaches all the limitations of Claim 7, except for hiding the

payload of data such that it cannot be recorded by particular video recorders.

29.   Again, Morio '575 teaches the corresponding limitation, specifically a method of

transmitting data in a video signal whereby the data is not recorded by particular video

recorders (column 13, lines 29-47).

30.   In order to implement an encoder for the video scrambling/unscrambling system

of McAdam '162, in such a way that the data payload – which is stored in a blanking

interval – could not be recorded by particular video recorders, it would have been

obvious to a person having ordinary skill in the art to apply the data hiding techniques of

Morio '575 to the encoder of McAdam '162. Thus Claim 7 is rejected under 35 USC

103(a).

31.   Regarding Claim 10, McAdam '162 teaches a decoder in which a scrambled

video signal has been modified to carry a data payload containing unscrambling

information for that video signal (column 4, line 40 through column 5, line 25).

Specifically, it teaches:

-     a video input terminal for receiving the modified signal (see Figure 12

      "Television Signal");

-     a video output terminal coupled to the input terminal (see Figure 12, the

      signal feeding out of the A/D Converter, which will be decrypted downstream);

-     extraction circuitry having an input terminal coupled to the video input terminal

      and which extracts the data from the predetermined portion of the modified

      video signal (see Figure 12, items 242 (decryptor), and 232 (line spin

      transform decoder) in particular);

-     data output terminal coupled to the extraction circuitry to output the extracted

      data (see Figure 12, items 230 (line tilt compensation circuit), 34' (memory),

      and 38' (inverter) in particular);

(also see column 4, line 40 through column 5, line 25). Nonetheless, McAdam '162 does not explicitly teach hiding the payload of data such that it cannot be recorded by particular video recorders.

32.   Again, Morio '575 teaches the corresponding limitation, specifically a method of transmitting data in a video signal whereby the data is not recorded by particular video recorders (column 13, lines 29-47).

33.   In order to implement a decoder for the video scrambling/unscrambling of McAdam '162, in such a way that the data payload -- which is stored in a blanking interval -- could not be recorded by particular video recorders, it would have been obvious to a person having ordinary skill in the art to apply the data hiding techniques of Morio '575 to the decoder of McAdam '162. Thus Claim 10 is rejected under 35 USC 103(a).

34.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over McAdam '162 in view of Morio '575 as applied to Claim 7 above, and in further view of Court '519.

35.   Claim 8 recites the additional limitation to Claim 7 where the "predetermined part" is below a selected voltage level. Neither McAdam '162 nor Morio '575 explicitly teach lowering the voltage level of a "predetermined part" of a video signal.

36.   However, Court '519 teaches a television communication secrecy technique in which the video carrier is suppressed for a "predetermined part" of the video in which data is to be hidden (column 26, lines 40-61). This implies modifying and specifically reducing the voltage level of the video signal.

37.   In order to implement an encoder for the scrambling/unscrambling method of

McAdam '162, plus to secure the data payload using the method of hiding data as

taught by Morio '575, and to provide yet additional security by selectively suppressing

the video carrier as taught by Court '519, it would have been obvious to a person having

ordinary skill in the art implement to apply the data hiding techniques of Morio '575 to

the encoder of McAdam '162; and then to achieve stronger security to apply the

television communication secrecy technique of Court '519 by lowering voltage in a

"predetermined part" of the signal. Thus Claim 8 is rejected under 35 USC 103(a).

38.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over McAdam

'162 in view of Morio '575 as applied to Claim 6 above, and in further view of

Montgomery '168.

39.   Claim 9 recites the additional limitation to Claim 6 where the "predetermined part"

is above a "predetermined frequency". Neither McAdam '162 nor Morio '575 explicitly

teach increasing the frequency of a "predetermined part" of a video signal.

40.   However, Montgomery '168 teaches a technique in which data can be injected

into a "modulated signal into the video bandwidth at a frequency greater than the

chrominance subcarrier" (column 16, lines 12-14). While, the specific application taught

by Montgomery '168 is to transmit facsimile information in vestigial sidebands of a video

signal, this technique applies for the transmission of any type of data, including

synchronization information. Montgomery '168 goes on to teach, "Therefore, a wide

variety of data may be transmitted and is particularly useful in systems where one way

communications is preferred." (column 15, line 66 through column 16, line 1). This teaching implies modifying and specifically increasing the frequency of the "predetermined part" that carries the injected data.

41.   In order to implement an encoder for the scrambling/unscrambling method of McAdam '162, plus to secure the data payload using the method of hiding data as taught by Morio '575, and to provide additional security by modifying the frequency as taught by Montgomery '168, it would have been obvious to a person having ordinary skill in the art implement to apply the data hiding techniques of Morio '575 to the encoder of McAdam '162; and then to achieve stronger security as per Montgomery '168 to by increasing the frequency in a "predetermined part" of the signal above a "predetermined level". Thus Claim 9 is rejected under 35 USC 103(a).

Conclusion

42.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- U.S. Patent No. 4,405,942 issued to Block et al., "Method and System for Secure Transmission and Reception of Video Information, Particularly for Television." Provides another reference where video data is protected by scrambling and decode information is sent in the blanking interval..

- U.S. Patent No. 4,571,642 issued to Hofstein, "Method and Apparatus for Modifying a Video Signal to Prevent the Unauthorized Recording and

Reproduction Thereof." Provides another reference in which video data is protected by scrambling. Unlike the McAdam '162 reference, it modifies the VBI rather than using the blanking interval to store data.

- U.S. Patent No. 4,163,253 issued to Morio et al., "Method and Apparatus for Modifying a Video Signal to Prevent Unauthorized Recording and Reproduction Thereof." An earlier patent issued to Morio et al., it teaches another method to protect video data by modifying the blanking interval.

- U.S. Patent No. 5,737,417 issued to Buynak et al., "Videotape Anti-Copying Encryption Scheme." Provides another reference in which video data is protected by scrambling, also by modifying the blanking interval.

- U.S. Patent No. 4,928,177 issued to Martinez, "Two-Way Data Broadcast Networks." Provides another reference for using subcarriers, and modifying frequency in general. Unlike the Court '519 reference, it teaches two-way data communications over the subcarrier rather than one-way data communications.

- U.S. Patent No. 5,799,081 issued to Kim et al., "Illegal View/Copy Protection Method and Apparatus for Digital Broadcasting System." Provides useful background information. Also discusses a modification to MacroVision IPPS.

- Graf, Rudolf F. and William Sheets, "Video Scrambling and Descrambling for Satellite and Cable TV," 1998, NewNes. Excellent overview text of Video Scrambling and Descrambling. Also adds the full text of five key patents in the back of the book.

43.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Patrick J Santos whose telephone number is 703-305-

0707. The examiner can normally be reached on M-F 8:00-4:30.

44.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers

for the organization where this application or proceeding is assigned are 703-746-7239

for regular communications and 703-746-7240 for After Final communications.

45.   Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

3900.

pjs
August 12, 2003

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